

PACKAGE CONSTRUCTION FOR FLUID APPLICATOR DEVICE

BACKGROUND OF THE INVENTION

[0001] The present invention relates to an apparatus for applying selected fluids to the teeth or oral cavity of a dental patient directly from a delivery device. Specifically, the present invention relates to a novel combination of a delivery device, disposable tip, pre-selected fluid and storage means.

[0002] There exists a need for a fluid applicator device that can be used to apply pre-selected dental fluids to a patient. Heretofore, no one has supplied the components of the present invention in a single source kit form.

[0003] In performing various dental procedures, dentists routinely apply selected fluids to the teeth, gums or oral cavity of the mouth of a patient. The fluids can be purchased or acquired in a variety of ways. They can be purchased in bulk containers whereby the dentist or other dental professional must then transfer the fluid into smaller containers for delivery to an individual patient. The fluids can be purchased in small foil packets. Again, the contents of each packet must be transferred to the selected delivery apparatus. However, whenever fluid is transferred, there always exists the risks of contaminating the fluid, spilling the fluid or increasing waste associated with the need for additional containers. The fluids can be purchased in sealed applicator tips. This system has the advantage in that it is not necessary to transfer the fluid from one container to the next prior to use. It should be noted that because of the small volume within such tips, purchasing the fluids in sealed applicator tips tends to add substantially to the fluid's cost.

[0004] In the case of fluid supplied in bulk, there are numerous ways of applying the fluid to the dental site. One way is to simply transfer the fluid into a smaller container and then use a brush to apply the fluid to the designated area. The brush may have bristles, much like a common paint brush or have small fibers adhered to its working end.

[0005] A second method of application includes transferring the fluid into a reusable syringe. While eliminating the need for a smaller container and separate brush, the syringe must be cleaned after each use. The possibility of spilling and/or contaminating the fluid also still exists.

[0006] In a third common way of distributing dental fluids, a single dose is prepackaged in a foil-like container. The container can be opened by simply tearing away a portion of the foil and then a brush or other applicator can be dipped into the open pouch. As in the above described distribution methods, the possibility of spillage and contamination still exist.

[0007] While many fluids are utilized by dentists for purposes of supplying dental treatment, the present invention is directed towards carries detection fluids, sodium hypochlorite and hemostatic agents.

SUMMARY OF THE INVENTION

[0008] The invention is best described as a package construction for a device for applying dental fluids including a plurality of syringes, each syringe having a fluid chamber and an outlet, said chamber containing a fluid selected from

the group consisting of carries detection, sodium hypochlorite and hemostatic agent; a plurality of disposable tips, each tip adapted to be attached to one of said syringes at said outlet; and a molded plastic tray, said tray having a plurality of receptacles formed therein for receiving and retaining said syringes and at least one receptacle formed therein for receiving said tips. In a preferred embodiment the package construction further includes a cover that can be removably attached to the tray. The tips have a variety of tip end configurations including straight tips, bent tips, flocked tips and bristle or brush tips. In another preferred embodiment, all of the package components including the syringes, tips and tray are disposable.

[0009] An alternate embodiment may be described as a package construction for a plurality of syringes each containing a pre-selected fluid therein, the package construction including a plurality of syringes, each syringe having a fluid chamber and an outlet, said chamber containing a fluid selected from the group consisting of carries detection, sodium hypochlorite and hemostatic agent; a plurality of disposable tips, each tip adapted to be attached to one of said syringes at said outlet; and a molded plastic tray, said tray having a plurality of receptacles formed therein for receiving and retaining said syringes and at least one receptacle formed therein for receiving said tips.

[0010] In yet another embodiment, the invention may be described as a package construction for a plurality of tips having pre-selected end configurations, the package construction including a plurality of syringes, each syringe having a fluid chamber and an outlet, said chamber containing a fluid selected from the group consisting of carries detection, sodium hypochlorite and hemostatic agent; a plurality of disposable tips selected from the group consisting of straight tips, bent tips, brush tips and flocked tips, each tip adapted to be attached to one of said syringes at said outlet; and a molded plastic tray, said tray having receptacles formed therein for receiving and retaining said syringes and at least one receptacle formed therein for receiving said tips.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a perspective view of the present invention with the cover removed.

[0012] FIG. 2 is a perspective view of the present invention showing a separate single container for the tips.

[0013] FIG. 3 is a perspective view of the present invention showing two containers for the tips.

[0014] FIG. 4 is a perspective view of an assembled fluid delivery system.

[0015] FIG. 5 is a perspective view of an alternate assembled fluid delivery system.

[0016] FIG. 6 is another perspective view of another alternate assembled fluid delivery system.

[0017] FIG. 7 is an exploded view of a fluid delivery system.

[0018] FIG. 8 is a perspective view of the present invention with the cover partially attached.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0019] The following is a description of the preferred embodiment of the invention in which like reference numer-